



Polishing the chain

Clean Water Funds from BWSR, cooperation from landowners and support from the lakes association advance Le Sueur County SWCD's prioritized phosphorus reduction project in the Jefferson German chain of lakes watershed



LE CENTER — The most conspicuous of Le Sueur County Soil & Water Conservation District's water quality improvement projects within the Jefferson German watershed restored a 2.5-acre wetland at the edge of a hog farm directly across a county road from Middle Jefferson Lake.

"The water doesn't come off of our farm, but we get blamed for it because it runs across our property," said Leo Koppelman, who runs the feeder pig operation with his brother and son. "All I've heard is, 'Koppelman's hog farm is polluting the lake.'"



Middle Jefferson — one of five lakes in the chain that includes German, East Jefferson, West Jefferson and Swede's Bay — is impaired for aquatic recreation due to nutrient loading.

The SWCD's \$484,000 phosphorus reduction project aims to improve water quality in the chain with strategically placed best management practices that help to reduce nutrient loading. The chain lies within the Cannon River watershed, which drains into the Mississippi River.



Top: Le Sueur County SWCD Manager Mike Schultz and Cleveland Township farmer Leo Koppelman discuss the restoration planned for the 2.5-acre wetland at left. Completed in summer 2020, the work was part of the SWCD's \$484,000 phosphorus reduction project made possible with a Clean Water Fund grant from BWSR. Middle Jefferson Lake lies across the county road seen in back. **Above:** Le Sueur County SWCD aims to improve water quality in the Jefferson German chain of lakes with strategically placed best management practices that reduce nutrient loading. **Photo Credits:** Ann Wessel, BWSR



With his brother and son, Koppelman runs a contract feeder pig operation. About 3,000 mixed-breed Hampshire-Duroc-Yorkshires are on the farm at any one time. He raised his first litter of pigs as a Cleveland High School Future Farmers of America project in 1955. The 100-acre farm site has been in Koppelman's family since 1862. Before they switched to hogs in the late 1960s, his father had raised mink for about 50 years. Koppelman talked about the operation and the farm's history with Schultz, center photo. **Photo Credits:** Ann Wessel, BWSR

“Whenever you have a landowner who wants to do something along a major recreational lake, you want to be able to do that,” said Ryan Jones, the Mankato-based South Central Technical Service Area engineer who worked on the wetland design.

The \$40,000 wetland project on Koppelman’s land now diverts water from a ravine and treats runoff from about 200 acres — most of it from neighboring fields fertilized with cow manure and hog manure — before it enters the lake.

The Cleveland Township site is one of 13 identified as high priorities within the 15,400-acre watershed, based on terrain analysis, the Total Maximum Daily Load (TMDL) study, and onsite verification. It’s one of 10 that Mankato Water Resource Center monitoring had identified and prioritized years earlier.

A \$387,000 Clean Water Fund grant from the Minnesota Board of Water and Soil Resources made it possible for Le Sueur County SWCD staff to pursue projects with willing landowners. Matching funds include \$34,000 from Le Sueur County’s aggregate mining tax. Landowners’

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share was tiered, based on projects’ priority.

“That’s what I’ve always wanted to do, but I’ve never had the resources to do it myself, or never felt that I wanted to do it for somebody else just to appease them,” said Koppelman, whose share was 10%.

Over the years, the Koppelmans had taken steps to curb runoff.

In the 1970s when the county determined that overflow caused by rain and snowmelt was polluting the lake, the Koppelmans built a lagoon and closed a couple of barns.

Six years ago, Koppelman enrolled land in the federal Conservation Reserve Program and replaced a 1960s-built gabion basket. Designed for erosion control, it no longer functioned properly. Most recently, Environment and Natural Resources Trust Fund dollars made a bluff stabilization possible.

When he meets with lake association members, Le Sueur County SWCD Manager Mike Schultz stresses the need for cooperation — and money.

“I always tell these lake associations, ‘If you want to do something for the lake, you need money. Pancake feeds. Do something. If you can’t bring something to the table, how are we going to have the other half come to the table?’ ” Schultz said. “I feel like our role is bringing these two together and making sure that we understand that we’re moving forward together. Leo’s been a great example of how this works.”

The Greater Jefferson German Lakes Association contributed \$12,000 toward Jefferson German water quality improvements.

“Our goal is to work with anyone and everyone around the chain of lakes that is interested in

preserving the quality of the water,” said association President Ralph Redding.

A retired Blue Cross Blue Shield financial analyst from Apple Valley who bought a cabin on Middle Jefferson Lake in 1991, Redding is one of about 130 shoreland property owners on Middle Jefferson Lake, and one of about 900 on the chain of lakes.

The 136-member association raised \$10,000 through a raffle and event at Beaver Dam Resort, situated on the chain of lakes. To raise the rest, Redding asked area businesses to contribute items for an auction.

“What benefits are we going to obtain from the phosphorus runoff project?” Redding said. “The quality of the water should improve.”

The 21 best management practices completed by early December 2020 represent about 70% of the work planned in connection with the Clean Water Fund grant, which runs through December 2021. Practices tied to the grant include structures designed to slow and filter runoff, 275 acres of cover crops, and two wetland restorations totaling about 27 acres.



Contractors in summer 2020 excavated more of the wetland to increase flood storage, and installed a culvert connecting it to the upper watershed.

Photo Credit: Le Sueur County SWCD

The Koppelman project alone is projected to reduce soil erosion by 161 tons a year, curb sediment loading by 69 tons a year and reduce phosphorus loading by slightly more than 79 pounds a year.

“If they’re all completed and function at their fullest, we will address 40% to 50% of the recommended phosphorus (reductions) from the WRAPS,” Schultz said, referring to the Minnesota Pollution Control Agency’s Watershed Restoration and Protection Strategy.

Phosphorus feeds the algae that can turn lakes green.

Nutrient impairments are just one factor affecting the watershed. Schultz said the SWCD also is dealing with higher-than-average lake levels and flooding caused in part by increasingly frequent heavy rains.

The Jefferson chain of lakes’ water level in 2019 was 1.63 feet higher than the historical average, which dates to 1971. (Technically, German Lake levels are recorded separately. Because German Lake is connected to the chain, its levels vary only slightly.)

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Todd Piepho, the Minnesota Department of Natural Resources’ Waterville-based area hydrologist, said 2019 water levels remained high nearly all season. Coupled with high winds, sustained high-water levels can cause significant shoreline damage.

A 6-inch rain put Koppelman’s wetland restoration to the test this summer shortly after construction finished.

“Everything worked exactly the way it was supposed to work. It took all the water that would run down the ditch and (across) our driveways. It stopped everything. It backed that excess water up in the wetland area,” Koppelman said.

Jones saw the flash-flood warnings for Le Sueur County that weekend. Then he received a text with photos.

“Anytime anyone does that after it rains, I kind of cringe. I always think of the worst-case scenario. Maybe that’s part of being the engineer,” Jones said. But the news was good. “The concept and all the engineering paid off because the basin took the water and was able to function correctly.”

Koppelman said several neighbors have complimented him on the project. Jones said passersby have given the highly visible site a lot of attention. That could generate more landowner interest in SWCD conservation projects.

Cost-effectiveness is key — especially with practices such as cover crops, where producers likely won’t see

upfront savings.

“We are trying to have people adopt cover crops. If we can get them to do some of those (practices), we’re going to catch those numbers faster than we have ever dreamed of, more than a BMP (best management practice) or anything else, because we’re going to have vegetation on these fields, in theory, year-round,” Schultz said of meeting phosphorus reduction goals.

The SWCD stresses that reduced inputs lead to savings.

“There’s a lot of farmland, but if we can get some of those landowners to start adopting these ideas, we could make some large strides,” Schultz said.



The Minnesota Board of Water and Soil Resources’ mission is to improve and protect Minnesota’s water and soil resources by working in partnership with local organizations and private landowners.
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